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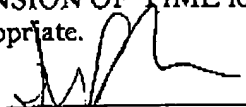
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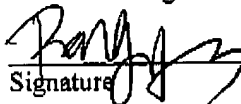
Applicant: **ONISHI ET AL.**
Serial No.: **09/890758**
App. Filed: **August 2, 2001**
Group Art No.: **2625**

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S/N 09/890,758

PATENTIN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Onishi et al.	Examiner:	Heather D. Gibbs
Serial No.:	09/890,758	Group Art Unit:	2625
Filed:	August 2, 2001	Docket No.:	10921.0099USWO
Title:	IMAGE SENSOR AND TRANSPARENT COVER FOR THE SAME		

CERTIFICATE UNDER 37 CFR 1.6:

The undersigned hereby certifies that this correspondence is being sent via facsimile to the United States Patent & Trademark Office, Commissioner for Patents (MAIL STOP: APPEAL BRIEF-PATENTS) on November 27, 2006.

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R. Christine Yang

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APPELLANTS' BRIEF ON APPEAL

Dear Sir:

This Brief is presented in support of the Notice of Appeal filed September 25, 2006, from the final rejection of Claims 1, 3 and 5-19 of the above-identified application, as set forth in the Office Action mailed March 24, 2006 and maintained in the Advisory Action mailed October 2, 2006.

Please charge our Deposit Account No. 50-3478 in the amount of \$500.00 to cover the required fee for filing this Brief.

I. REAL PARTY IN INTEREST

The application pending for this appeal has been assigned to Rohm Co., Ltd., of Kyoto, Japan.

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II. RELATED APPEALS AND INTERFERENCES

The Assignee, the Assignee's legal representatives, and the Appellants are unaware of any other appeals or interferences that will affect, be directly affected by or have a bearing on the Board's decision in this Appeal.

III. STATUS OF CLAIMS

Claims 1, 3 and 5-19 are pending and are the subject of this Appeal. The pending claims are reproduced in the appendix to this Brief.

IV. STATUS OF AMENDMENTS

A Response to the final Office Action was filed on July 20, 2006, under 37 C.F.R. § 1.116. By way of Advisory Action mailed October 2, 2006, the Response was considered, but deemed as not placing the application in condition for allowance.

V. SUMMARY OF CLAIMED SUBJECT MATTER

As discussed on page 1 of the specification, the present invention relates to an image sensor for reading a document image and a transparent cover for the image sensor. For example, the image sensor can be a contact type image sensor having a case, a transparent cover attached to the case, a light source and a plurality of light receiving elements. When read by the image sensor, the document is placed on the transparent cover, and the light source throws light towards the transparent cover from inside the case.

Referring to Figs. 1 - 8, as discussed at pages 11-20 of the specification, one embodiment of the device of the present invention includes an image sensor A having a transparent cover 1, a plurality of light sources 52, a plurality of light receiving elements 53, a synthetic resin case 50, a platen roller 6 and a lens array 54. The transparent cover 1 includes a transparent main body 10 and a transparent glass member 20. The transparent main body 10 is made of synthetic transparent resin, and is formed into a rectangular plate as a whole. The transparent glass member 20 is embedded in a groove 11 of the transparent main body 10.

When in use, light is emitted from the light source 52 for reading an image of the document D. The light illuminates the document D placed on a surface 1a of the transparent cover 1 and then is reflected. Light reflected by the document D in a linear image-reading region S passes the transparent glass member 20 of the transparent cover 1 into the image sensor A, and travels toward the lens array 54. The light is then focused by the lens array 54 on the light receiving surfaces of the light receiving elements 53. Since the transparent glass member 20 has a high hardness, its surface is not easily damaged by contact with the platen roller 6. On the other hand, the upper surface 10a of the transparent main body 10, which is made of a synthetic resin, is more susceptible to the damage, yet the damage, which is not made in the image reading region S, does not pose a major problem in the image reading operation. Therefore, it becomes possible to minimize the problem of distortion in a read image of the document D due to the surface damage in the transparent cover 1. Further, when the transparent glass member 20 is fitted into the groove 11 of the transparent main body 10, the upper surfaces of the two members are made flush with each other, which avoids the problems of the document D being caught by the surface of the transparent cover 1 (see page 17, line 23 to page 18, line 21 of the present specification).

Moreover, the transparent cover 1, made primarily of synthetic resin that forms the transparent main body 10, is light and impact resistant. This helps reduce the weight of the image sensor, with the transparent glass member 20 being of a relatively small size. Further, the transparent glass member 20 is embedded in the groove 11 and is thus protected by the transparent main body 10. Therefore, both the transparent main body 10 and the transparent glass member 20 are well protected from cracking and other damage. Since the transparent main body is made of synthetic resin, it is easy to provide the transparent main body 10 with, for example, engaging projections 12a, 12b by injection molding. Thus, it can be provided with a suitable shape for assembling the image sensor (see page 18, line 22 to page 19, line 8 of the present specification).

As can be seen in Figs. 9-14, the image sensor A of the present invention is quite versatile, and is capable of being modified with a number of different features. For example, nontransparent regions 3A, 3A' can be provided at end portions of the groove 11 (Fig. 11 and page 22 of the present specification). A nontransparent member 8 can be provided at an end

portion of the groove 11 of the transparent main body 10 (Fig. 12 and pages 22-23 of the present specification). A separate groove 11a that is fitted with a nontransparent member 8A can be provided in the transparent main body 10 (Fig. 13 and page 23 of the present specification).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The following issues are raised in the final rejection:

1. Whether claims 1, 3, 5, 15-16 and 18 are anticipated by US 5,859,421 (Onishi et al.);
2. Whether claims 6-9 are obvious over Onishi et al. in view of US 5,455,412 (Imagawa et al.). For purposes of this appeal alone, Appellants are not contesting the relevance of Imagawa et al. to claims 6-9 nor its suitability for combination with the remaining reference. Claims 6-9 stand or fall with claim 5 from which claims 6-9 depend, and Imagawa et al. will not be addressed further in this Brief;
3. Whether claims 10-14 are obvious over Onishi et al. in view of US 5,943,141 (Tamura). For purposes of this appeal alone, Appellants are not contesting the relevance of Tamura. to claims 10-14 nor its suitability for combination with the remaining reference. Claims 10-14 stand or fall with claim 5 from which claims 10-14 ultimately depend, and Tamura will not be addressed further in this Brief; and
4. Whether claims 17 and 19 that have not been addressed in the Detailed Action are allowable.

VII. ARGUMENT

A. Claims 1, 3, 5, 15-16 and 18 Are Not Anticipated by US 5,859,421 (Onishi et al.)

Claim 1 requires a transparent cover including a transparent main body of a synthetic resin and a transparent glass member corresponding to an image reading region. Claim 1 also requires that the transparent main body have a groove corresponding to the image reading region and that the transparent glass member be placed in the groove.

The Onishi et al. image sensor includes a glass cover 22, a plurality of LED chips 25, a plurality of image sensor chips 24, a case 21, and rod lens array 27 for focusing reflected light from the surface of the document D.

Onishi et al. fail to disclose or suggest a transparent cover including a transparent main body of a synthetic resin and a transparent glass member, as required by claim 1. On the contrary, the glass cover 22 discussed at col. 2, line 54 to col. 3, line 6, col. 4, lines 1-10 and Figs. 3 and 4 of Onishi et al. includes only one structural member, rather than the two structural members, i.e., a transparent main body of synthetic resin and a transparent glass member, as required by claim 1. Therefore, Onishi et al. cannot be interpreted to meet the requirements of claim 1.

The Examiner seems to rely on the case 21 as suggesting the claimed transparent main body of the transparent cover. This is incorrect. First, the Onishi et al. case is not made of a transparent material. There is no disclosure in Onishi et al. that the case 21 is made of a transparent material. In Figs. 3-5, the case 21 is depicted as being made of the same material throughout. The entire case 21 could not be made of a transparent material because the Onishi et al. image sensor is supposed to guide the light from the light source to illuminate the document placed on the glass cover 22 (Abstract of Onishi et al.). Transparent sidewalls would diffuse the light to other locations and prevent the adequate illumination of the document to be copied. While Onishi et al. took care to illuminate elements 22 and 26 in accordance with the conventional hatching for transparent materials, this was not done for the case 21. Therefore, the case 21 cannot be considered as the transparent main body of the cover as required by claim 1.

Moreover, nothing in Onishi et al. suggests that the case 21 should be a cover of the image sensor. As clearly shown in Figs. 3-5, the case 21 can be considered as defines boundaries of the light transmission opening. But in no case can it be considered as forming the main body of the transparent cover of the image sensor, as required in claim 1, since the case 21 provides no structure to close the light transmission opening.

Therefore, Onishi et al. do not meet all of the requirements of claim 1 and claims 3 and 18 that depend from claim 1. Therefore, claims 1, 3 and 18 are patentable over Onishi et al.

Similarly, independent claim 5 requires a transparent cover including a transparent main body of a synthetic resin and a transparent glass member corresponding to an image reading

region. Claim 5 also requires that the transparent main body have a groove corresponding to the image reading region and that the transparent glass member be placed in the groove. Claim 5 is distinguishable from Onishi et al. for the reasons similar to those discussed above with regard to claims 1 and thus is patentable over Onishi et al.

Claim 15 requires a transparent main body of synthetic resin and a transparent glass member placed in a groove formed in a surface of the transparent main body. Claim 15 is distinguishable from Onishi et al. for the reasons similar to those discussed above regarding claims 1 and thus is patentable over Onishi et al.

Claim 16 requires a transparent main body of synthetic resin and a transparent glass member placed in a groove formed in a surface of the transparent main body. Claim 16 is distinguishable from Onishi et al. for the reasons similar to those discussed above regarding claims 1 and thus is patentable over Onishi et al.

B. Claims 6-9 Are Allowable with Claim 5

Claims 6-9 are included in the rejection for obviousness over Onishi et al. in view of Imagawa et al. As noted above in Section VI, for purpose of this appeal only, Appellants are not contesting the relevance of Imagawa et al. to claims 6-9 nor its suitability for combination with Onishi et al. Claims 6-9 are allowable for at least the reasons discussed above for their independent claim 5.

C. Claims 10-14 Are Allowable with Claim 5

Claims 10-14 are included in the rejection for obviousness over Onishi et al. in view of Tamura. As noted above in Section VI, for purpose of this appeal only, Appellants are not contesting the relevance of Tamura to claims 10-14 nor its suitability for combination with Onishi et al. Claims 10-14 are allowable for at least the reasons discussed above for their independent claim 5.

D. Claims 17 and 19 Are Allowable

Claims 17 and 19 are indicated as being rejected in the final rejection Summary sheet, however, they are not specifically addressed in the Detailed Action.

Claim 17 is allowable for at least the reasons discussed above for its independent claim 16.

Claim 19 requires a transparent cover including a transparent main body of a synthetic resin and a transparent glass member corresponding to an image reading region. Claim 19 also requires that the transparent main body have a groove corresponding to the image reading region and that the transparent glass member be placed in the groove. Claim 19 further requires a case covered by the transparent cover, which encloses the light source and the plurality of light receiving element.

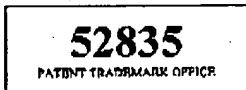
Claim 19 is distinguishable from Onishi et al. in that the present case is covered by the transparent cover including a transparent main body of a synthetic resin and a transparent glass member, while the Onishi et al. case is covered by the glass cover 22, which is only one structural member and clearly does not have the structure members of the transparent main body of a synthetic resin and the transparent glass member, as required by claim 1 (see Onishi et al, col. 2, line 54 to col. 3, line 6, col. 4, lines 1-10 and Figs. 3 and 4). Therefore, Onishi et al. cannot be interpreted to meet the requirements of claim 19 and claim 19 is thus patentable over Onishi et al.

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VIII. CONCLUSION

Appellants submit that the rejections of claims 1, 3 and 5-19 are untenable for the reasons set forth above and should be reversed.

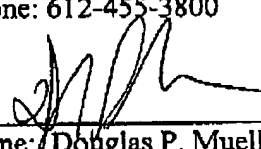
Please charge any additional fees or credit any overpayment to Hamre, Schumann, Mueller & Larson Deposit Account No. 50-3478.



Respectfully submitted,

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Date: November 27, 2006

By 
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APPENDIX A - PENDING CLAIMS

1. An image sensor comprising:
 - a transparent cover having a first surface on an image reading region side, and a second surface away from the first surface;
 - a light source throwing light to the image reading region from a second-surface side of the transparent cover; and
 - a plurality of light receiving elements each receiving reflected light from the image reading region and outputting an image signal corresponding to an amount of the light received;
 - wherein the transparent cover includes a transparent main body of a synthetic resin, and a transparent glass member corresponding to the image reading region,
 - wherein the transparent main body has a groove corresponding to the image reading region, the transparent glass member being placed in the groove; and
 - wherein the transparent main body and the transparent glass member each have a surface which is flush with each other and provide the first surface.
3. The image sensor according to Claim 1, wherein the groove is provided by a through hole formed in the transparent cover.
5. An image sensor comprising:
 - a transparent cover having a first surface on an image reading region side, and a second surface away from the first surface;
 - a light source throwing light to the image reading region from a second-surface side of the transparent cover; and
 - a plurality of light receiving elements each receiving reflected light from the image reading region and outputting an image signal corresponding to an amount of the light received;
 - wherein the transparent cover includes a transparent main body of a synthetic resin, and a transparent glass member corresponding to the image reading region,
 - wherein the transparent main body has a groove corresponding to the image reading region, the transparent glass member being placed in the groove,
 - wherein the transparent glass member is exposed on a first-surface side, and

wherein the image reading region is linear, the transparent cover having a nontransparent region corresponding to an end portion of the image reading region.

6. The image sensor according to Claim 5, wherein the nontransparent region is formed with a white spot or a black spot.

7. The image sensor according to Claim 6, wherein the nontransparent region is formed with both of the white spot and the black spot.

8. The image sensor according to Claim 5, wherein the image reading region is linear, the transparent cover having a nontransparent region corresponding to the other end portion of the image reading region.

9. The image sensor according to Claim 8, wherein one of the nontransparent regions is formed with a white spot and the other is formed with a black spot.

10. The image sensor according to Claim 5, wherein the nontransparent region is provided by a part of the glass member rendered nontransparent.

11. The image sensor according to Claim 10, wherein the nontransparent region is provided by a part of the glass member applied with a coating.

12. The image sensor according to Claim 10, wherein the nontransparent region is provided by a nontransparent member pasted to a part of the glass member.

13. The image sensor according to Claim 5, wherein the nontransparent region is provided by a nontransparent member separate from the glass member and the cover main body, placed in the groove.

14. The image sensor according to Claim 13, wherein the groove is divided into a glass member receiving portion for receiving the glass member and a nontransparent member receiving portion for receiving the nontransparent member.

15. A transparent cover for image sensor, comprising a transparent main body of a synthetic resin, and a transparent glass member placed in a groove formed in a surface of the transparent main body,
the groove having at least a longitudinal end portion provided with a nontransparent region.

16. A transparent cover for image sensor, comprising a transparent main body of a synthetic resin, and a transparent glass member placed in a groove formed in a surface of the transparent main body,
the transparent main body and the transparent glass member each having a surface flush with each other and providing the first surface.

17. The transparent cover according to Claim 16, further comprising a nontransparent region provided at least at one longitudinal end portion of the groove.

18. The image sensor according to claim 1, further comprising a case covered by the transparent cover, the case enclosing the light source and the plurality of light receiving elements.

19. The image sensor according to claim 5, further comprising a case covered by the transparent cover, the case enclosing the light source and the plurality of light receiving elements.

APPENDIX B - EVIDENCE

Not applicable

APPENDIX C - RELATED PROCEEDINGS

Not applicable